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Notice of Allowability

Application No.

10/064,173

Examiner

Russell Frejd

Applicant(s)

DHIR ET AL.

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's filing on 16 September 2002.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Russell Frejd
RUSSELL FREJD
PRIMARY EXAMINER

In re Application of: Dhir et al.

Allowance of Application # 10/064,173

1. The following communication is in response to applicant's paper received 18-June-2002.

Examiner's Amendment

2. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

2.1 In the Claims:

claim 1 line 1 Change "A method" to --A computer-implemented method--.

Reasons for Allowance

3. The following is an Examiner's Statement of Reasons for the indication of allowable subject matter. The instant application is directed to a non-obvious improvement over the information described in the related prior art, specifically the article authored by Yang et al., entitled *Robustness Optimization for Vehicular Crash Simulations*. The improvement comprises a system and method for optimizing the design of a mechanical system, wherein a design of experiments matrix is determined using a plurality of design parameters, with each parameter having a range of variation. The matrix is used for creating a plurality of models of the mechanical system and a simulation test, the simulation test being used to output a simulation result for each of the models, the simulation results comprising a performance attribute result for

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each of a plurality of performance attributes. The method then creates a plurality of response surface models capable of modeling the each of the performance attributes over the range of variation for each of the design parameters, wherein a desired performance metric for each of the response surface models is chosen and a design parameter value is selected from the range of variation for each of the design parameters, whereby the selection optimizes the desired performance metrics for at least one of the response surface models. This patentable distinction is included in each of the independent claims, nos. 1 and 6.

The art of record, either individually or in combination, fails to teach, suggest, or render obvious the useful, concrete and tangible <method for optimizing the design of a mechanical system, especially the determination of faulty simulation results, the consolidation of the results in a result summary, and the discarding any faulty simulation results so that the result summary comprises a plurality of accurate simulation results indicating the performance attribute result for each of the plurality of performance attributes> having the corresponding structure which is disclosed in the specification and equivalents thereof at least at page 3, paragraph 0012 through page 7, paragraph 0022, and Figures 1-3. In view of the foregoing, the claims of the present application are found to be patentable over the prior art.

Response Guidelines

4. Any comments considered necessary by applicant **MUST** be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should clearly be labeled "Comments on Statement of Reasons for Allowance".

4.1 Any response to the Examiner in regard to this allowance should be

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directed to: Russell Frejd, telephone number (571) 272-3779, Monday-Friday from 0530 to 1400 ET, or the examiner's supervisor, Jean Homere, telephone number (571) 272-3780. Inquires of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist (571) 272-2100.

mailed to: Commissioner of Patents and Trademarks
P.O. Box 1450, Alexandria, VA 22313-1450

or faxed to: (571) 273-8300

Hand-delivered responses should be brought to the Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

Date: 18-September-2005

A handwritten signature in cursive script that reads "Russell Frejd". The signature is written in dark ink and is positioned above a horizontal line.

**RUSSELL FREJD
PRIMARY EXAMINER**